

Mathematics Policy

The National Curriculum states:

“Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.”

Aims and Objectives

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

At Tonacliffe Primary School the teaching of maths is geared towards enabling each child to develop their learning and achieve their full potential. We endeavour to not only develop the mathematics skills and understanding required for later life, but also to foster an enthusiasm about mathematics itself. We aim to increase pupil confidence in maths so they are able to express themselves and their ideas using the language of mathematics with assurance. We want the children to see mathematics as being relevant to their world and applicable to everyday life as well as being something that they will need as they move on through their school life and ultimately to the world of employment.

Our aim is to ensure that all children develop:

- a positive attitude towards mathematics and an awareness of the fascination of mathematics
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematics
- the ability to use and apply mathematics across the curriculum and in real life

Knowledge, skills and understanding

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving
- mathematical reasoning
- individual, group and whole class discussions and activities
- open and closed tasks
- a range of methods of calculating eg mental, pencil and paper
- working with computers as a mathematical tool

Scheme of work

Our school scheme of work is a working document and as such is composed of ongoing plans produced on a week by week basis. This is developed from the National Curriculum and takes into consideration the needs of our children.

Teachers' planning and organisation

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics coordinator.

We aim to develop children's:

- arithmetic skills
- fluency
- reasoning
- problem solving

Each class organises a daily lesson of between 45 and 60 minutes for mathematics.

Teachers of the Reception class base their teaching on objectives for Reception; this ensures that they are working towards the early learning goals for mathematical development.

Teaching styles and strategies

A range of styles of teaching are necessary for the teaching of Mathematics. Approaches need to be related to the topic itself and to the abilities and experience of both teachers and pupils. Our teaching at all levels shall include opportunities for:

- teacher exposition;
- discussion techniques (pupil/pupil and pupil/teacher)
- appropriate practical work;
- consolidation and practice of fundamental skills and routines;
- problem solving;
- the committing to memory and recall of a range of mathematical facts;
- investigation work;
- classwork, group work, individual work.

Differentiation

This should always be incorporated into all mathematics lessons and can be done in various ways:

- Stepped Activities which become more difficult and demanding but cater for the less able in the early sections.
- Common Tasks which are open ended activities/investigations where differentiation is by outcome.
- Resourcing which provides a variety of resources depending on abilities eg. counters, cubes, 100 squares, number lines, mirrors.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme and usually at no more than three levels.

Special educational needs

Children with Special Educational Needs are taught within the daily mathematics lesson and are encouraged to take part when and where possible (please see the section on differentiation).

Where applicable children's pupil passports incorporate suitable objectives from the 2014 National Curriculum and teachers keep these objectives in mind when planning work.

When additional support staff are available to support groups or individual children they work collaboratively with the class teacher.

Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Assessment

We assess children's work in mathematics from three aspects (long-term, short-term and medium-term).

We make short-term assessments (Assessment for Learning) which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives and will usually not be formally recorded.

We assess children's understanding at the end of units and also assess children at the end of each term in order to closely monitor progress and how well they have retained new learning.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. We use the national tests for children in Year 2 and Year 6.

Reporting to parents

Reports are completed before the end of the summer term and parents are given opportunity to discuss their child's progress in Parents' Evenings during the year.

Teachers use the information gathered from their assessments to help them comment on individual children's progress.

Monitoring and evaluation

The mathematics coordinator monitors and evaluates the quality and standards of mathematics throughout the school through:

- Lesson observations.
- Analysis of SATs results and teacher assessment.
- Monitoring of planning and children's work.

EYFS

Mathematics is continually developed within early years: children are given time to explore mathematical concepts, test ideas, develop their understanding and practise skills through play. Maths can be found in all areas of our continuous provision and children experience it in a purposeful and meaningful context within their play and daily routines. Children are encouraged to use their mathematical understanding and skills to solve real-life problems and practitioners are trained to identify and extend opportunities to foster this.

The role of the mathematics co-ordinator

- Prioritise improvements for the teaching and learning of mathematics across the school and contribute to the school improvement plan, in consultation with the Headteacher and Governing Body, driving forward the improvement of mathematics teaching and progress and achievement of learners.
- Evaluate on a regular basis the policy and scheme of work to ensure they form the basis of practice of mathematics within the school.
- Support teachers in their teaching of mathematics.
- To encourage and assist in-service training.
- To keep up-to-date by attending courses and feedback sessions organised by LEA, cluster groups or other colleagues.
- To purchase, organize and maintain teaching resources.
- Track the progress of identified groups of children and be involved in a thorough evaluation of Mathematics looking at trends over time, value added from baseline predictions to end of Key Stage Assessment results and report findings to the Headteacher and Governors.
- To offer specialist advice and knowledge for special needs and gifted pupils.
- To co-ordinate recording and presentation throughout the school.
- Audit provision for mathematics across the school in terms of teaching and learning, resources, and standards on a regular basis.
- To encourage ways of involving parents in their children's learning.

The over-riding focus must be to provide the best mathematical experiences for the children in Tonacliffe Primary School by supporting everybody who teaches mathematics and so improve the quality and continuity of mathematics teaching and learning throughout the school.

The governing body

The mathematics governor visits the school to talk with teachers and when possible, observes some daily mathematics lessons.

The mathematics governor reports back to the curriculum committee on a regular basis.

Equal opportunities

This policy has been written according to the guidelines laid down in the school's Equality Policy. As with all teaching at the school, mathematics is taught in such a way as to include all children irrespective of their ability, gender identity, sexual orientation, race, religion, disability or socioeconomic status. Within a caring and supportive environment, we believe in encouraging positive relationships between groups and individuals whilst providing challenge and stimulation. We hope and believe that these positive experiences result in children developing the confidence and expertise to confidently express themselves mathematically.